



**Manchester
Metropolitan
University**

Collins, Alison, Cartwright, S and Cowlshaw, S (2017) Sicknes Presenteeism and Sicknes Absence Over Time: A UK Employee Perspective. *Work and Stress*, 32 (1). pp. 68-83. ISSN 0267-8373

Downloaded from: <https://e-space.mmu.ac.uk/621648/>

Publisher: Taylor & Francis (Routledge)

DOI: <https://doi.org/10.1080/02678373.2017.1356396>

Please cite the published version

<https://e-space.mmu.ac.uk>

Sickness presenteeism and sickness absence over time: a UK employee perspective

Collins, A. M^{1*}, Cartwright, S¹, and Cowlshaw, S²

¹Centre for Organizational Health and Wellbeing, Lancaster University, Lancaster, LA1 4YG, United Kingdom

²School of Social & Community Medicine, Bristol University, Bristol, BS8 2PS, United Kingdom

Word count (exc. figures/tables): 7,137

*Corresponding author Alison M Collins (a.m.collins@lancaster.ac.uk)

This work was supported by a grant awarded by The BUPA Foundation

Abstract

This paper examined the influence of sickness presenteeism, defined here as going to work despite illness, and sickness absenteeism behaviour on employee psychological wellbeing, work performance and perceived organizational commitment in a sample of UK workers (n=552). Self-report measures were administered on two occasions, separated by one year, to employees from four public sector and two private sector organizations. Structural Equation Modelling (SEM) was used to evaluate simultaneous influences of sickness presenteeism and sickness absenteeism on outcomes over time. Results suggested that employees reporting sickness presenteeism reported lower work performance in comparison to those reporting no sickness presenteeism, when measured concurrently but not over time. Employees reporting any sickness presenteeism in the previous three months showed relatively reduced psychological wellbeing but there was no significant association over time. Six or more days sickness presenteeism was associated with a reduction in employee perceptions that their organization was committed to them, concurrently and over time. There were no significant influences of sickness absenteeism on any outcome measure. Our results strengthen previous research and suggest that sickness presenteeism, but not sickness absenteeism, has implications for individual outcomes. The findings have implications for the way organizations manage their sickness absence systems.

Keywords: sickness presenteeism, sickness absenteeism, psychological wellbeing, work performance, prospective study, perceived organizational commitment

Introduction

Since the 1990's there has been increasing empirical interest from researchers and practitioners in the concept of presenteeism; which has been defined in a number of ways (Johns, 2010). However, recently two distinct research strands have emerged: one focuses on reduced productivity due to employee health (Turpin et al., 2004), while the second concerns individuals "attending work while ill" (Johns, 2010:521) and is often referred to as 'sickness presenteeism' (SP). This paper focuses upon the latter concept.

Aronsson and Gustafsson (2005) suggest that personal and work related demands influence an employees decision to either go to work despite illness or take sick leave. Indeed, a recent meta-analysis of the SP literature highlighted that employee attendance decisions while ill, were not completely determined by medical condition, but were also associated with work and personal demands (Miraglia and Johns, 2016). Personal demands include financial needs as well as personality factors such as boundarylessness (i.e. the ability to say no to the expectations and requests of others) (Aronsson and Gustafsson, 2005), a strong work ethic or job commitment (e.g. McKevitt, Morgan, Dundas, and Holland 1997). Work-related factors appear to be more wide ranging and research suggests that SP may be more susceptible to such demands than sickness absenteeism (SA) (Bockerman and Laukkanen, 2009). For example, high workload, work time pressures, staffing levels, overtime demands and organizational mechanisms for controlling work attendance (e.g., availability of paid sick leave, sickness absence trigger points) (Miraglia and Johns, 2016), insecure job status (Biron, Brun, Ivers and Cooper, 2006) and employee perceptions of replaceability (in terms of tasks being outstanding on their return) (Aronsson & Gustafsson, 2005) are likely be perceived by the individual as barriers to sickness absence and so lead to SP.

The prevailing unemployment levels and welfare state characteristics of the country are also likely to influence SP. For example, whether welfare state systems have a high or low social expenditure is likely to influence attendance decisions (Claes, 2011, Benach et al., 2014). In the UK, for example, a low social expenditure along with limited employment protection, and low rates of working days lost to illness may encourage SP (Claes, 2011). On the other hand, the UK's relatively low unemployment level may reduce SP as it indicates greater job security (Claes, 2011) and employees may feel more able to take sick leave when ill. Thus, in times of high unemployment employees may perceive job insecurity more acutely (Hansen and Andersen, 2008) which is likely to affect attendance decisions. Interestingly, the link between organizational change and job security and attendance behaviour is unclear. For example, while several studies have found that SA increases following a period of downsizing (Johns, 2010), Caverley, Cunningham and MacGregor (2007) found that SA was less than half the Canadian national average in a company going through substantial downsizing. The authors suggested that employees were replacing SA with SP.

Aronsson and Gustafsson (2005) questioned whether SP leads to future ill health. A review by Skagen and Collins (2016) identified twelve prospective studies which suggest that SP at baseline is associated with a health outcomes including poor self-rated health (e.g. Bergstrom et al., 2009a, Gustafsson and Marklund, 2011 and Dellve, 2011) and physical complaints (Gustafsson and Marklund, 2011) at follow up. The few prospective studies that have concentrated upon mental wellbeing reveal mixed results. For example, Gustafsson and Marklund, (2011) found SP was associated with poor mental wellbeing at 12 months follow up. Furthermore, SP is associated with an increased risk of depression 2 years later, despite respondents not being depressed at baseline (Conway, Hogg, Rugulies and Hansen 2014). However, Lu, Peng, Lin, and Cooper (2014) found no association between SP and mental

health three months later. In addition, there is limited prospective research to suggest that SP may also affect work performance. For example, Gustafsson & Marklund, (2011) and Dellve, Hadzibajramovic, and Ahlborg (2011) utilised the work ability index (a self-assessment measure of an individual's general state of health and an estimate of their ability to work) and found that two or more days of SP at baseline was a predictor for reduced workability at follow up. The current paper builds upon this relatively small corpus of prospective research.

SP is interconnected with sickness absence as when an employee suffers from any type of illness they make a decision as to whether they go to work despite being ill or take sick leave (Johns, 2010). Sickness absence has been clearly linked to medical conditions and health related behaviours such as smoking (Lundborg 2007), and both problem drinking and abstinence (Marmot et al 1995). Negative work attitudes such as job dissatisfaction (Johns 2001) and feelings of injustice (De Boer, Bakker, Syroit, and Schaufelli 2002; Johns 2001) have also been shown to be predictors of sickness absence. There is also a significant body of literature demonstrating the link between stress and sickness absence (Cartwright and Cooper 2009). This has shown that (i) stress is implicated in a range of medical conditions, (ii) individuals go absent to escape workplace stressors and (iii) absence performs a restorative function. SA has also been shown to be influenced by work group attitudes and normative behaviour; in that certain workgroups or organizations develop distinctive absence cultures and may even view sickness leave as an entitlement rather similar to holiday leave and hence part of their employment package (Rentsch and Steel 2003). However, the consequences of sickness absence are less understood, although negative outcomes of long term sick leave such as inactivity and isolation, reduced career opportunities and income advancement have been identified it is unclear whether they are due to taking sick leave or the underlying condition that resulted in the sick leave (Vingård, Alexanderson, and Norlund 2004).

Although it is suggested that continuing to attend work when ill is detrimental to longer term health the relationship between SP and SA has been relatively little researched. Prospective research suggests that SP increases the risk of future sickness absence (Bergstrom et al 2009b; Hansen and Andersen, 2009; Gustafsson and Marklund, 2011; Janssens et al., 2013) whereas sickness absence does not appear to lead to future SP (Gustafsson and Marklund, 2011). This paper builds on previous prospective research and contributes to the SP literature by exploring the influence of both SA and SP behaviour on employee mental wellbeing, work performance and perceived organizational commitment over time. Notwithstanding the potential for bi-directional influences (whereby wellbeing, work performance and organizational commitment could also influence SA and SP), there are statistical challenges associated with evaluating these alternative pathways (e.g., given that SP is likely to follow highly skewed and ‘zero inflated’ distribution), and this paper adopted a narrow focus on the outcomes of SA and SP over time.

It is important to take account of the timing and context of this study, which was conducted in 2010-2011 and sampled from public and private organizations. The UK experienced a recession during 2008 and 2009 and the economy shrank further during 2011 and 2012, which led to concerns that the UK was experiencing a ‘double dip’ recession although economic growth was subsequently described as “broadly flat” (Hardie and Perry, 2013). The public sector was particularly affected, with overall employment decreasing by 67,000 in 2011: specifically the National Health Service decreased by 8,000 and the police service by 4,000 (ONS 2011). Although overall employment in the private sector increased by 5,000 during the same period (ONS, 2011), private companies were still subject to uncertainty with some introducing redundancies or reducing hours worked (Campos et al (2011). Thus, the current study focuses on a working population who were going through organizational change during

an economic downturn: public sector employees in two participating organizations were about to go through redundancy processes and two had already announced staff cuts. In one private sector organization staff were concerned about job security during the study follow up because the company was operating at a low production volume. Thus, this paper contributes uniquely to the literature by exploring SA and SP behaviour at a time of organizational change and job insecurity during a period of economic recession across the UK.

Method

Procedure and participants

Thirty-two organizations were invited to take part in a mixed-methods study of SA and SP. Seven agreed to take part but one withdrew leaving six participating organizations. These included three police forces, one National Health Primary Care Trust, and two private manufacturing organizations. The research comprised a quantitative survey and qualitative interviews. The questionnaire was distributed in three ways. In two organizations employees were randomly selected and invited by email to complete the questionnaire via a secure website. In four organizations all employees were invited to take part via an organizational communication containing a link to the questionnaire. One organization also disseminated 300 paper copies of the questionnaire to production staff that did not have access to a work computer. In order to increase response rates, two reminder emails were sent to 999 participants where the researchers had access to email addresses. Data collection took place from May to July 2010, and produced a total sample of $n = 1170$.

All participants in the quantitative study were contacted again one year later (May to July, 2011) and were asked to complete a second questionnaire. The response rate was 48.6%, which produced a sample of $n = 569$ participants providing data at both T1 and T2. One participant

was excluded because of high levels (> 35%) of missing data, leaving an effective sample size of $n = 568$. Around half this sample (51.8%) was aged 41 years or older, with remainders falling into younger age categories (< 31 years = 19.7%; 31-40 years = 28.5%). Around half (51.6%) were male, and reported qualifications including high school (GCSE/A levels or equivalent) (56%), degree level qualifications or higher (34.3%), and no or 'other' qualifications (9.0%). Most participants (91.9%) reported having children aged under 18 years. A large majority (89.3%) worked full-time (mean hours worked = 41.32, SD = 8.64) and reported employment in the public sector (73.8%).

Data preparation

A binary categorical variable (representing participation at T2) was regressed on socio-demographic variables and levels of SP and SA, respectively, in a series of bivariate logistic regression analyses to screen for differences between T2 participants and non-responders. Results indicated that the probability of participating at T2 was not significantly related to gender, employment status (full-time versus part-time), hours worked, as well as SP and SA. However, T2 participants were likely to be older (41 years plus), relative to the youngest age category (18 to 30 years), and have children aged under 18 years. They were less likely to have no or 'other' qualifications, relative to participants with high school or equivalent. Odds Ratio's [O.R.'s] ranged from 1.52 to 1.63 and were small in magnitude. From the remaining 569 cases, $n = 123$ still demonstrated some level of missing data; most of which ($n = 75$) were missing on one or two items only. Multiple Imputation (MI) with $k = 30$ imputed datasets in MPlus Version 7 was used to impute missing data for the remaining $n = 568$ cases.

Measures

Socio-demographic measures (with categorisations in parentheses) included gender, age (18-30, 31-40, +40 years), education (GCSE/A levels or equivalent, bachelor degree or higher, no or 'other' qualifications), employment (part-time, full-time), hours worked, and children below 18 years of age.

Following other prospective studies (see Skagen and Collins, 2016 for a review) we adopted a single item to measure SP ("Over the last 3 months how many working days have you been coming to work through illness or injury?") and SA ("Over the last 3 months how many working days have you been off work through illness or injury?"). The majority of prospective research has assessed attendance behaviour over a twelve month period, apart from studies by Lu, Lin and Cooper (2013) and Lu et al. (2014) which adopted a six month time period. However, the most appropriate recall period for SP has not yet been determined (Johns, 2010). If we draw upon the sickness absence literature Severens et al., (2000) suggest that a recall period of six months or more may lead to recall bias. Thus, this study adopted a shorter recall period in order to improve memory recall.

Work performance was measured using items from the job work performance scale from WHO Health and Work Performance Questionnaire (HPQ: Kessler et al., 2003). Although the scale consists of 7-items in total, only three of these were found to be sufficiently internally consistent. These items were: "How often did you find yourself not working as carefully as you should?"; "How often was the quality of your work lower than it should have been?"; and "How often did you not concentrate enough on your work?". All items were scored on a response scale ranging from (1) all of the time to (5) none of the time, such that high scores indicate better work performance. The remaining items were defined by alternative operationalisations of work performance, including performance relative to others (e.g., How

often was your performance higher than most workers on your job?) and perceptions of health impacts on performance (e.g., How often did health problems limit the kind or amount of work you could do?). These items shared limited variance and were excluded from analyses. The internal consistency reliability of the current 3-item scale was $\alpha = .78$ and $\alpha = .75$ at T1 and T2, respectively.

Psychological wellbeing was measured using 11-items from a subscale of the ASSET organizational screening tool (Cartwright and Cooper, 2002). This subscale asked whether participants had experienced symptoms of changes in behaviour over the last three months including panic or anxiety attacks, irritability, difficulty making decisions, loss of sense of humor and difficulties concentrating. Items were scored on a 4-point likert scale with responses ranging from (0) never [experienced the symptom or change in behaviour], to (3) often [experienced the symptom or change in behaviour]. High scores indicate worse psychological wellbeing. In terms of convergent validity, Johnson and Cooper (2003) found a strong positive correlation ($r = 0.58$, $p < 0.001$) between the ASSET psychological scale and the General Health Questionnaire (Goldberg, Gater, Sartorius and Uston, 1997). In the current study, the internal consistency reliability of these items was $\alpha = .93$ and $.94$ at T1 and T2, respectively.

Perceived commitment of the organization to the employee was measured using five items from a subscale of the ASSET organizational screening tool (Cartwright and Cooper, 2002). As Jain, Giga and Cooper (2013) point out, employees expect to be trusted and appreciated and expect extra effort to be recognized by their organization and this subscale measures the degree to which individuals perceive that their organization is committed to them (for example “I feel valued and trusted by the organization”). The items are scored on a 6 point Likert scale with

high scores indicative of high commitment. The internal consistency reliability for the scale was $\alpha = 0.85$ at both T1 and T2.

Data analyses

Analyses were conducted using Structural Equation Modelling (SEM) in MPlus version 7. Preliminary analyses comprised tests of measurement model specification (Anderson & Gerbing, 1988) for the proposed outcome variables (work performance, organizational commitment, and psychological wellbeing). Individual items were specified as indicators of latent variables representing work performance and organizational commitment, while item parcels (cf. Little, Cunningham, Shahar, & Widaman, 2002) were used as indicators of psychological wellbeing to reduce model complexity (as defined by numbers of indicators per latent variable). Item parceling is suitable when constructs are unidimensional, and this was supported in the current instance. For example, Exploratory Factor Analysis (with Principal Axis Factoring) supported a strong primary factor underlying the items measuring psychological wellbeing at both measurement occasions, with the majority of variance in each item pool captured by a dominant first factor and a ratio of the first eigenvalue to the second greater than 3 to 1 in all instances (Hall, Snell, & Foust, 1999). Confirmatory Factor Analysis (CFA) models were then estimated (using ML estimation) to evaluate the measurement properties of work performance, organizational commitment and psychological wellbeing scales, respectively, while providing simultaneous tests of measurement invariance over time. Statistical indices were used to evaluate the overall fit of invariant models, including the χ^2 -test of exact fit and approximate fit indices; including the Confirmatory Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR). Criteria for evaluating model fit based on the recommendations of Hu and

Bentler (1999) were used, and included: a non-significant χ^2 statistic; CFI > 0.95; SRMR < 0.08; and RMSEA < 0.06.

Once adequately fitting measurement models were established, a series of structural models were specified to evaluate influences of SA and SP behaviour on organizational and individual outcomes concurrently, and prospectively over time. In all models, SA and SP behaviour were specified as correlated exogenous dummy variables (representing zero days, 1 to 5 days, or more than 6 days, respectively) that allowed for examination of non-linear effects on proposed outcomes. For the cross-sectional analyses, T1 latent variables were regressed on concurrent measures of SA and SP behaviour, as well as socio-demographic controls. Given that cross-sectional associations can reflect effects of antecedent behaviours on hypothesised outcomes (e.g., SP → work performance), as well as reverse influences (e.g., work performance → SP), prospective analyses were also conducted. An example path diagram is presented in Figure 1, and shows that these models regressed T2 latent variables on t T1 predictors, as well as T1 measures of the same latent construct. Such analyses impose a temporal sequence on variables, whereby the proposed antecedents (e.g., SP) are situated prior to hypothesised outcomes (e.g., work performance) in time. The models specify ‘stability’ effects (e.g., T1 work performance → T2 work performance) as well as additional ‘cross-lagged’ pathways (e.g., T1 SP → T2 work performance) that represent directional influences on relative change in outcomes over time, controlling for stability effects (Martens and Hause, 2006). Given the high levels of model complexity associated with estimating endogenous latent variables, the measures of mental wellbeing, work performance and organizational commitment could not be included in a single model (owing to sample size limitations), and were instead considered in separate analyses. An alpha level of $p < .05$ was used to establish statistical significance, although trends significant at more liberal levels ($p < .10$) were identified.

Figure 1 here

Results

Preliminary analyses

CFA models were estimated to evaluate measurement model properties and longitudinal invariance of proposed outcome measures. Each model specified two latent variables representing the same target construct (e.g., work performance) measured at both T1 and T2. Manifest indicators (items or item parcels) were specified as loading on the relevant latent variable (T1 or T2) with all within-time residual correlations constrained to zero. Error terms for corresponding manifest variables measured at different times were allowed to covary, while factor loadings and intercepts were constrained to be equivalent (or invariant) across time. The latent mean of the T1 variable was constrained to zero in order to identify a test of differences between latent means. Fit statistics for these models are shown in Table 1.

Table 1 here

The measurement models of work performance and psychological wellbeing provided excellent fit to the data, as demonstrated by a non-significant χ^2 statistic and all approximate fit indices in desired ranges. Although there was a significant χ^2 associated with the model of organizational commitment (suggesting the lack of exact fit to the data), the approximate fit indices were within desired ranges and were deemed acceptable. All factor loadings were positive and statistically significant, with a median standardized loading of 0.74, 0.70, and 0.90 for work performance, organizational commitment and psychological wellbeing, respectively. Given that model constraints required that factor loadings and intercepts were equal across time, these fit statistics also support the scalar invariance of the measures. Tests of latent mean differences showed no evidence of change from T1 to T2 on work performance and

psychological wellbeing. In contrast, there was evidence of significant overall declines in employee perceptions of organizational commitment towards them across time.

Structural analyses

A series of structural models were estimated to consider influences of SA and SP on latent variables representing work performance, organizational commitment and psychological wellbeing. These included models of cross-sectional associations (Model A), which regressed T1 outcomes on socio-demographic measures and concurrent indicators of both SA and SP behaviour. Models of prospective associations (Model B) regressed T2 outcomes (e.g., work performance) on socio-demographic measures and SA and SP behaviour at T1, as well as the latent variable representing the same outcome (e.g., work performance) also measured at T1. Results are shown in Table 2.

Table 2 Here

The results indicated socio-demographic predictors of the proposed outcomes. Female gender was associated with higher work performance at T1, while trends ($p < .10$) suggested associations with worse psychological wellbeing (as reflected in higher scores) at T1, and higher perceived commitment from the organization at T2. Older age (41 years plus) was associated with lower work performance at T1, while another trend suggested an association with worse psychological wellbeing (all relative to the youngest age). Relative to participants with high school (GCSE/A levels) or equivalents, having a bachelor degree or higher was associated with lower work performance at both time points, while there was a trend suggesting an association with lower organizational commitment. Participants with no (or other) formal qualifications also tended to report higher work performance at T2 (relative to participants with high school qualifications). A further trend suggested that part-time employed was associated with higher work performance.

Table 2 shows that after controlling for socio-demographics, SA was not significantly related to any of the proposed outcome variables when measured concurrently at T1. In the prospective analysis, there was a trend ($p = 0.064$) suggesting an association between 1 to 5 days SA and lower work performance. In contrast, 1 to 5 days SP at T1 was significantly associated with lower work performance and psychological wellbeing when also measured at T1. In these cross-sectional analyses, 6 days or more SP was also associated with lower work performance, as well as lower employee perception of organizational commitment and psychological wellbeing. In the prospective analyses there was a significant effect of 6 days or more SP being associated with reduced perceptions of organizational commitment over time, even when controlling for socio-demographics and stability effects. There were trends suggesting an association between 1 to 5 days SP and change in work performance ($p = 0.059$), and among 6 days or more SP and both work performance ($p = 0.060$) and psychological wellbeing ($p = 0.064$). In each instance, higher SP was potentially associated with reduced work performance and worse psychological wellbeing.

Discussion

This two wave prospective study examined the concurrent and prospective influence of SA and SP behaviour on employee wellbeing, work performance, and employee perceptions of their organization's commitment to them. As highlighted above, it is important to take account of the timing of this study, which coincided with the UK going back into recession, a circumstance which is likely to influence attendance behaviours. Two public sector organizations in this study were about to go through redundancy processes, while two had announced staff cuts. In addition, one private sector organization was operating at low production which had raised concerns about job security at T2. It should be noted that the sample included employees from occupational groups including managers and senior officials, professional occupations, associate professional and technical occupations (including police), skilled trades and process,

plant, machine and vehicle operatives. Our findings therefore provide a rare insight into the outcomes of SA and SP behaviour across a range of employees at a time of organizational change and job insecurity during a period of recession.

The results indicated that SP had implications for employee perceptions of their organization, as reflected in non-linear associations. That is, reports of 6 or more days SP behaviour were found to predict reductions in the degree to which individuals believed their organization was committed to them, while there was no comparable associations involving lower levels of SP behaviour (1-5 days). These findings were observed in the cross-sectional data, as well as the prospective analyses which modelled the cross-lagged pathway from SP at T1 to organizational commitment at T2, while controlling for baseline organizational commitment. As such, the findings provide support for the directional influences of SP on subsequent organizational commitment, and cannot be explained by the reverse influences of perceived commitment on SP (although the current analyses did not evaluate these reverse influences, and cannot exclude the possibility that they exist simultaneously with the directional influences that were observed in this study). They may suggest that employees who perceive that they have gone into work whilst ill for 6 or more days over the preceding three months may partly attribute this decision to the organization itself. Employees may perceive that the organization is failing them, and is therefore less committed towards staff. In turn, we suggest this may lead to those who feel unable to take sick leave to feel negatively, and resentful towards the organization (which may ultimately reduce their commitment to the organization). This corresponds to research by Baker-Mclearn et al., (2010) who found the level of organization support, relating to SP and SA policies, influenced levels of employee commitment towards their company.

Previous research has suggested that the perceived commitment of the organization to the employee may mediate the relationship between organizational stressors and psychological wellbeing and may also protect against the negative influence of such stressors (Jain, et al., 2013). Thus, the individuals in this study who were exhibiting high levels of SP behaviour and who perceived a reduced level of commitment from their organization may have a reduced buffer against the potential stressors of organizational change and job insecurity, which may ultimately impact upon employee health and wellbeing. Further research is needed to explore the role of perceived commitment of the organization towards an employee upon attendance decisions and whether it is a mediating factor that explains future health outcomes.

Our analyses found that all levels of SP (1–5 days and 6 or more days) predicted lower work performance concurrently, while there were marginal trends ($p < .10$) when considered prospectively over time. Previous research into lost productivity presenteeism has established that various health conditions, such as allergies, arthritis and diabetes, are associated with reduced ‘on-the-job performance’ (see Shultz and Edington, 2007 for a review). Our findings adds to this literature by highlighting that participants from a working population, who report any SP over the previous three months also report lower concurrent work performance than those employees who do not report SP. However, there was no significant effect on work performance over time.

The results also indicated that both 1-5 days and 6 or more days presenteeism were associated with reduced employee mental wellbeing in the cross-sectional analyses, however high levels of SP behaviour (6 or more days) were only associated with lower levels of psychological wellbeing over time at a marginal level ($p < .10$). Such findings are consistent with previous cross-sectional research that found that employees with high levels of psychological distress

and psychosomatic complaints tended to report higher levels of SP (e.g. Biron, et al., 2006). Participants with poor psychological health may go into work while ill for the structure that work provides or because they want support from co-workers (Sanderson, Tilse, Nicholson, Oldenburg, and Graves et al., 2007). Alternatively, employees with poor psychological health may not see their symptoms as a justifiable reason to take sick leave (Johns 2010). Our prospective data found that SP over the previous three months had no association with employees' psychological wellbeing twelve months later, supporting previous findings by Lu et al., (2014) who adopted a recall period of 6 months. It may be that exploring attendance behaviours over a shorter time period than a year is a factor when looking at outcomes over time. Thus, the association between psychological/mental health, SA and SP over time would benefit from being explored further in future studies.

In contrast with findings for SP, the current study identified no associations with any outcomes and SA behaviour that were significant at conventional levels. Thus, our findings suggest that SP is an important organizational behaviour that has associations with psychological wellbeing and work performance, and is therefore deserving of as much attention as that of SA. Decisions around whether to take sick leave or work whilst ill can be viewed as “mutual alternatives” which are subject to attendance demands or pressures (Aronsson and Gustafsson, 2005). Organizations would do well to recognize that policies which promote the reduction of SA (for example, counting any subsequent leave arising from the initial condition as a second discrete period of absence) may be encouraging SP and hindering health recovery (Grinyer and Singleton 2000) as individuals may return to work prematurely, not fully recovered. On a practical level, organizations and managers need to be vigilant with regard to health screening and recovery from illness. Setting managerial targets for absence and/or outsourcing the absence management process may curtail absence, but is likely to increase SP. However, what

may be needed is a more balanced approach to the absenteeism/presenteeism issue. This is an important organizational concern given that SP and SA have consequences for organizations and society in terms of the overall long-term health and wellbeing of the labour force, and higher economic costs which extend beyond the behaviour of the individual (Roe and van Diepen, 2011).

Study limitations

A limitation of the study was that both SA and SP were measured by self-report survey measures. However, objective data about SA was not possible, given the way that organizations maintained this information and comparisons with the employee self-reported data were not possible. The subjective nature of SP means that occurrences are necessarily self-reported, as is usual with research in this area. As with all SP research, we rely on the participant's subjective evaluation of whether their health status warranted taking time off work and we cannot assess this objectively. However, as highlighted above, the recall period was set at three months in order to aid memory of SA and SP.

The analyses did not consider the influences of mental wellbeing, work performance and organizational commitment on either SA or SP, and did not evaluate the possibility of reverse influences (which may exist simultaneously with the directional influences observed in this study). This was because both SA and SP were characterized by highly skewed and 'zero inflated' distributions (which is common in SP research) that require alternative statistical models (e.g., count regression) that could not be readily integrated with the SEM framework in this study. We intend that these additional possibilities will be considered in the context of a separate paper. In addition, this study did not consider any potential 'third variable' accounts (e.g., mediation, moderation) of associations. This is notwithstanding suggestions that

perceived commitment of the organization to the employee may mediate the relationship between organizational stressors and psychological wellbeing, and may also protect against the negative influence of such stressors (Jain, et al., 2013). Further research is needed to explore such third variable accounts.

Another limitation was that respondents were not questioned with regard the nature of the illness or the duration of SA/SP periods. In addition, reduced work performance may have been attributable to factors other than SP, as highlighted in a review by Lagerveld et al (2010) who examined the work participation and work functioning outcomes of depressed workers. Further research that can control for attributes of the psychosocial work environment, and personal factors which also influence work performance and SP is needed to progress understanding of this issue. Finally, just 19% of the invited organizations took part in the study. This is an interesting observation in itself, and should be considered in the context of the research topic. Given the emphasis placed upon the control and management of sickness by organizations in the UK, a study on SA was not considered to be a high priority for many of the organizations contacted and they declined to take part. Indeed, one organization stated that they had struggled to manage SA, and to take part in a study on SP would be like ‘opening Pandora’s box’.

Conclusion

The majority of previous prospective research suggests SP is a prevalent organizational behaviour which, over time, leads to negative organizational and individual consequences. We found cross-sectional associations with SP and work performance or psychological wellbeing when considered concurrently, but not prospectively over time. Our findings add to the literature by highlighting that SP has negative implications in terms of employee perceptions of organizational commitment to staff. This study also adds to limited prospective research on

the consequences of employees going to work despite being ill or injured, by studying UK public and private sector employees during a time of recession. Thus, it adds new insight into the societal context within which employee decisions around sickness presence or absence take place. We suggest that the societal, as well as the organizational context, of attendance decisions needs to be more fully considered within SP research.

References

- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, 103(3), 411. doi:org/10.1037/0033-2909.103.3.411
- Aronsson, G., & Gustafsson, K. (2005) Sickness presenteeism: prevalence, attendance-pressure factors, and an outline model for research. *Journal of Occupational and Environmental Medicine*, 47(9)33, 958-966. doi:10.1097/01.jom.0000177219.75677.17
- Baker-McClearn, D., Greasley, K., Dale, J. & Griffith, F. (2010) Absence management and presenteeism: the pressures on employees to attend work and the impact of attendance on performance. *Human Resource Management Journal*, 20(3), 311-328. doi:10.1111/j.1748-8583.2009.00118.x
- Benach, J., Vives, A., Amable, M., Vanroelen, C., Tarafa, G., & Muntaner, C. (2014). Precarious employment: understanding an emerging social determinant of health. *Public Health*, 35(1), 229. doi:10.1146/annurev-publhealth-032013-182500

Bergström, G., Bodin, L., Aronsson, G., Hagberg, J., Lindh, T., & Josephson, M. (2009a). Does sickness presenteeism have an impact on future general health? *International Archives of Occupational and Environmental Health*, 82, 1179-1190. doi:10.1007/s00420-009-0433-6

Bergstrom, G., Bodin., Hagberg, J., Aronsson, G & Josephson, M (2009b) Sickness presenteeism today, sickness absenteeism tomorrow? A prospective study on sickness presenteeism and future sickness absenteeism, *Journal of Occupational and Environmental Medicine*, 51(6),1-10. doi:10.1097/JOM.0b013e3181a8281b

Biron C., Brun, J.P., Ivers H & Cooper., C.L (2006) At work but ill: psychosocial work environment and well being determinants of presenteeism propensity. *Journal of Public Mental health*. 5(4), 26-37. doi:10.1108/17465729200600029

Bockerman, P., & Laukkanen, E. (2010). What makes you work while you are sick? Evidence from a survey of workers. *European Journal of Public Health*, 20, 43-46. doi:dx.doi.org/10.1093/eurpub/ckp076

Campos, C., Dent, A., Fry, R & Reid, A (2011). Impact of the Recession. *Regional Trends*, 43(10/11), 1-69

Cartwright, S. & C. L. Cooper, (2002) ASSET: an organizational stress screening tool. Robertson Cooper Limited and Cubiks, London.

Cartwright S., & C.L. Cooper (2009) *The Oxford Handbook of Organizational Health and Well-being* Oxford: Oxford University Press. doi:10.1093/oxfordhb/9780199211913.001.0001

Caverley, N., Cunningham, J. B., & MacGregor, J. N. (2007). Sickness presenteeism, sickness absenteeism, and health following restructuring in a public service organization. *Journal of Management Studies*, 44(2), 304-319. doi:10.1111/j.1467-6486.2007.00690.x

Claes, R. (2011). Employee correlates of sickness presence: A study across four European countries. *Work & Stress*, 25, 224-242. doi:10.1080/02678373.2011.605602

Conway, P.M., Hogh, A., Rugulies, R., & Hansen, A.M. (2014). Is sickness presenteeism a risk factor for depression? A Danish 2-year follow-up study. *J Occup Environ Med*, 56, 595-603. doi:10.1097/JOM.0000000000000177

De Boer, E.M., Bakker, A.B., Syroit J.E., & Schaufelli, W.B (2002) Unfairness at work as a predictor of absenteeism. *Journal of Organizational Behaviour*, 23(2), 181-197. doi:10.1002/job.135

Dellve, L., Hadzibajramovic, E., & Ahlborg, G., Jr. (2011). Work attendance among healthcare workers: prevalence, incentives, and long-term consequences for health and performance. *Journal of Advanced Nursing*, 67, 1918-1929. doi:10.1111/j.1365-2648.2011.05630.x

Goldberg D.P., Gater, R. Sartorius N., & Uston, T.B., (1997) The validity of two versions of the GHQ in the WHO study of mental illness in general health care, *Psychological Medicine*, 27, 191-7

Grinyer, A & V. Singleton (2000) Sick absence as risk taking behaviour: a study of organizational and cultural factors in the public sector. *Health Risk Society*, 2(1), 7-21. doi:10.1080/136985700111413

Gustafsson, K., & Marklund, S. (2011). Consequences Of Sickness Presence And Sickness Absence On Health and Work Ability: A Swedish Prospective Cohort Study. *International Journal of Occupational Medicine and Environmental Health*, 24, 153-165. doi:10.2478/s13382-011-0013-3

Gustafsson, K., & Marklund, S. (2013). Associations between health and combinations of sickness presence and absence. *Occup Med (Lond)*, 64, 49-55. doi:10.1093/occmed/kqt141

Hall, R. J., Snell, A. F., & Foust, M. S. (1999). Item parceling strategies in SEM: Investigating the subtle effects of unmodeled secondary constructs. *Organizational Research Methods*, 2(3), 233-256. doi:10.1177/109442819923002

Hansen, C.D., & Andersen, J.H. (2008). Going ill to work - What personal circumstances attitudes and work-related factors are associated with sickness presenteeism? *Social Science and Medicine*, 67, 956-964. doi:10.1016/j.socscimed.2008.05.022

Hansen, C.D., & Andersen, J.H. (2009). Sick at work-a risk factor for long-term sickness absence at a later date? *Journal of Epidemiology and Community Health*, 63, 397-402. doi:10.1136/jech.2008.078238

Hardie, M., & Perry, F (2013) Economic Review, May 2013 Office for National Statistics (ONS) Retrieved 9 May 2017 from http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/dcp171766_308566.pdf

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, 6(1), 1-55. doi:10.1080/10705519909540118

Jain, A. K., Giga, S. I., & Cooper, C. L. (2013). Stress, health and well-being: the mediating role of employee and organizational commitment. *International journal of environmental research and public health*, 10(10), 4907-4924. doi:10.3390/ijerph10104907

Janssens, H., Clays, E., De Clercq, B., De Bacquer, D., & Braeckman, L. (2013). The relation between presenteeism and different types of future sickness absence. *J Occup Health*, 55, 132-141. doi:10.1539/joh.12-0164-OA

Johns G (2001) The psychology of lateness, absenteeism and turnover. This is a chapter. In N. Anderson, D. S. Ones, H.K. Sinangil & C. Viswesvaran (Eds) *Handbook of Industrial, Work and Organizational psychology*, volume 2, 232-252. London: Sage. doi:dx.doi.org/10.4135/9781848608368

Johns, G. (2010). Presenteeism in the workplace: A review and research agenda. *Journal of Organizational Behavior*, 31, 519-542. doi:10.1002/job.630

Johnson, S & Cooper, C.L (2003) The construct validity of the ASSET stress measure. *Stress and Health*, 19(3), 181-5. doi:0.1002/smi.971

Kessler, R. C., Barber, C., Beck, A., Berglund, P., Cleary, P. D., McKenas, D., Pronk, N., Simon, G., Stang, P., Ustun, T.B. & Wang, P. (2003). The world health organization health and work performance questionnaire (HPQ). *Journal of Occupational and Environmental Medicine*, 45(2), 156-174. doi:10.1097/01.jom.0000052967.43131.51

Lagerveld, S.E., Bültmann, U., Franche, R.L., Van Dijk, F.J.H., Vlasveld, M.C., Van der Feltz-Cornelis, C.M., Bruinvels, D.J., Huijs, J.J.J.M., Blonk, R.W.B., Van Der Klink, J.J.L. & Nieuwenhuijsen, K., (2010). Factors associated with work participation and work functioning in depressed workers: a systematic review. *Journal of occupational rehabilitation*, 20(3), 275-292. doi:10.1007/s10926-009-9224-x

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural equation modeling*, 9(2), 151-173. doi:10.1207/S15328007SEM0902_1

Lu, L., Lin, H.Y., & Cooper, C.L. (2013). Unhealthy and present: motives and consequences of the act of presenteeism among Taiwanese employees. *Journal of Occupational Health Psychology*, 18, 406. doi: 10.1037/a0034331

Lu, L., Peng, S.-Q., Lin, H.Y., & Cooper, C.L. (2014). Presenteeism and health over time among Chinese employees: The moderating role of self-efficacy. *Work & Stress*, 28, 165-178. doi:10.1080/02678373.2014.909904

Lundborg P. (2007) Does smoking increase sick leave? Evidence using register data on Swedish workers. *Tobacco Control*, 16(2), 114-118. doi:10.1136/tc.2006.017798

Marmot M., Feeney, A., Shipley, M., North F. & Syme, S. L. (1995). Sickness absence as a measure of health status and functioning from the UK Whitehall II study. *Journal of Epidemiology Community Health*, 49, 124-130. doi:10.1136/jech.49.2.124

Martens, M. P., & Haase, R. F. (2006). Advanced applications of structural equation modeling in counseling psychology research. *The Counseling Psychologist*, 34(6), 878-911. doi: 10.1177/0011000005283395

McKevitt, C., Morgan, M., Dundas, R., & Holland, W. W. (1997). Sickness absence and 'working through' illness: a comparison of two professional groups. *Journal of Public Health*, 19(3), 295-300. doi.org/10.1093/oxfordjournals.pubmed.a024633

Miraglia, M., & Johns, G. (2016). Going to work ill: A meta-analysis of the correlates of presenteeism and a dual-path model. *Journal of occupational health psychology*, 21(3), 261.

Office for National Statistics (2011) Public Sector employment, Q3, 2011. Statistical Bulletin. Retrieved 9 May 2017 from http://www.ons.gov.uk/ons/dcp171778_247739.pdf

Office for National Statistics (2011) Sickness absence dropped recession but then rose again. News Release. Retrieved 9 May 2017 from www.ons.gov.uk/ons/rel/lmac/sickness-absence-in-the.../sickness-absence.pdf

Rentsch J.R & Steel, R.P (2003) What does unit-level absence mean? Issues for future unit-level absence research. *Human Resource Management Review*, 13(2), 185-202. doi:10.1016/S1053-4822(03)00012-3

Roe R.A & Van Diepen B. (2011) Employee health and presenteeism: The challenge for Human Resource Management. This is a chapter. In A-S Antoniou & C. Cooper (Eds) *New Directions in Organizational Psychology and Behavioral Medicine*, 239-258. Farnham: Gower.

Sanderson, K., Tilse, E., Nicholson, J., Oldenburg, B., & Graves, N. (2007) Which presenteeism measures are more sensitive to depression and anxiety? *Journal of Affective Disorders*, 101, 65-74. doi:10.1016/j.jad.2006.10.024

Schultz, A.B., & Edington, D.W. (2007). Employee health and presenteeism: A systematic review. *Journal of Occupational Rehabilitation*, 17, 547-579. doi:10.1007/s10926-007-9096-x

Skagen, K., & Collins, A. (2016). The consequences of sickness presenteeism on health and wellbeing over time: A systematic review. *Social Science & Medicine*, 161:169-177. doi:dx.doi.org/10.1016/j.socscimed.2016.06.005

Turpin, R.S., Ozminkowski, R.J., Sharda, C.E., Collins, J.J., Berger, M.L., Billotti, G.M., Baase, C.M., Olson, M.J. and Nicholson, S., 2004. Reliability and validity of the Stanford Presenteeism Scale. *Journal of Occupational and Environmental Medicine*, 46(11), 1123-1133.

Vingård, E., Alexanderson, K., & Norlund, A. (2004). Consequences of being on sick leave. *Scandinavian journal of public health*, 32(63 suppl), 207-215.
doi:10.1080/14034950410021899

Table 1: Fit statistics for CFA models

Variable	χ^2	df	p	CFI	RMSEA	SRMR	Latent Mean Differences		
							Estimate	SE	p
Work Performance	7.36	9	0.600	1.00	0.00	0.02	-0.05	0.03	0.112
Organizational Commitment	79.05	37	0.000	0.99	0.05	0.03	-0.23	0.04	0.000
Psychological Wellbeing	3.91	9	0.917	1.00	0.00	0.01	0.06	0.07	0.388

Table 2: Results of Structural Analyses

Variables	Work Performance				Organizational Commitment				Psychological Wellbeing			
	Model A		Model B		Model A		Model B		Model A		Model B	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Gender												
Female	0.18**	0.05	0.05	0.05	0.01	0.05	0.06†	0.04	0.09†	0.05	0.00	0.04
Age												
31 to 40	-0.06	0.06	0.07	0.06	-0.04	0.06	-0.04	0.05	0.06	0.06	-0.01	0.04
41 plus	-0.14*	0.06	-0.02	0.06	-0.06	0.06	0.00	0.05	0.16**	0.06	0.06	0.04
Education												
Degree or higher	-0.11*	0.05	-0.11*	0.05	-0.08†	0.05	-0.02	0.04	0.03	0.05	-0.01	0.04
No (or other) formal												
qualifications	-0.04	0.05	-0.11*	0.05	-0.04	0.05	-0.03	0.04	0.05	0.05	-0.03	0.03
Employment												
Part-time	0.09†	0.05	0.02	0.04	-0.03	0.05	-0.02	0.03	-0.03	0.04	-0.03	0.03
Children												

Under 18 years	0.05	0.05	-0.01	0.05	-0.01	0.05	-0.05	0.03	-0.01	0.05	0.02	0.03
Absenteeism												
1 to 5 days	-0.00	0.05	-0.08†	0.04	0.01	0.05	0.03	0.03	-0.02	0.04	0.01	0.03
6 days or more	-0.02	0.05	-0.02	0.04	-0.05	0.05	-0.02	0.03	0.07	0.04	0.02	0.03
Presenteeism												
1 to 5 days	-0.12*	0.05	-0.09†	0.05	-0.06	0.05	0.01	0.04	0.18**	0.05	0.00	0.04
6 days or more	-0.14**	0.05	-0.09†	0.05	-0.15**	0.05	-0.08*	0.04	0.23**	0.04	0.07†	0.04
T1 Latent Variable			0.57**	0.04			0.70**	0.04			0.05	0.04
χ^2 (df)	36.74	(22)	113.9	(64)	80.96	(49)	225.56	(137)	39.45	(22)	130.85	(65)
p	0.025		0.000		0.003		0.000		0.013		0.000	
CFI	0.97		0.95		0.98		0.97		0.99		0.98	
RMSEA	0.03		0.04		0.03		0.03		0.04		0.04	
SRMR	0.02		0.04		0.02		0.04		0.01		0.04	

** = p<0.01 * = p<.05 † = p<.10

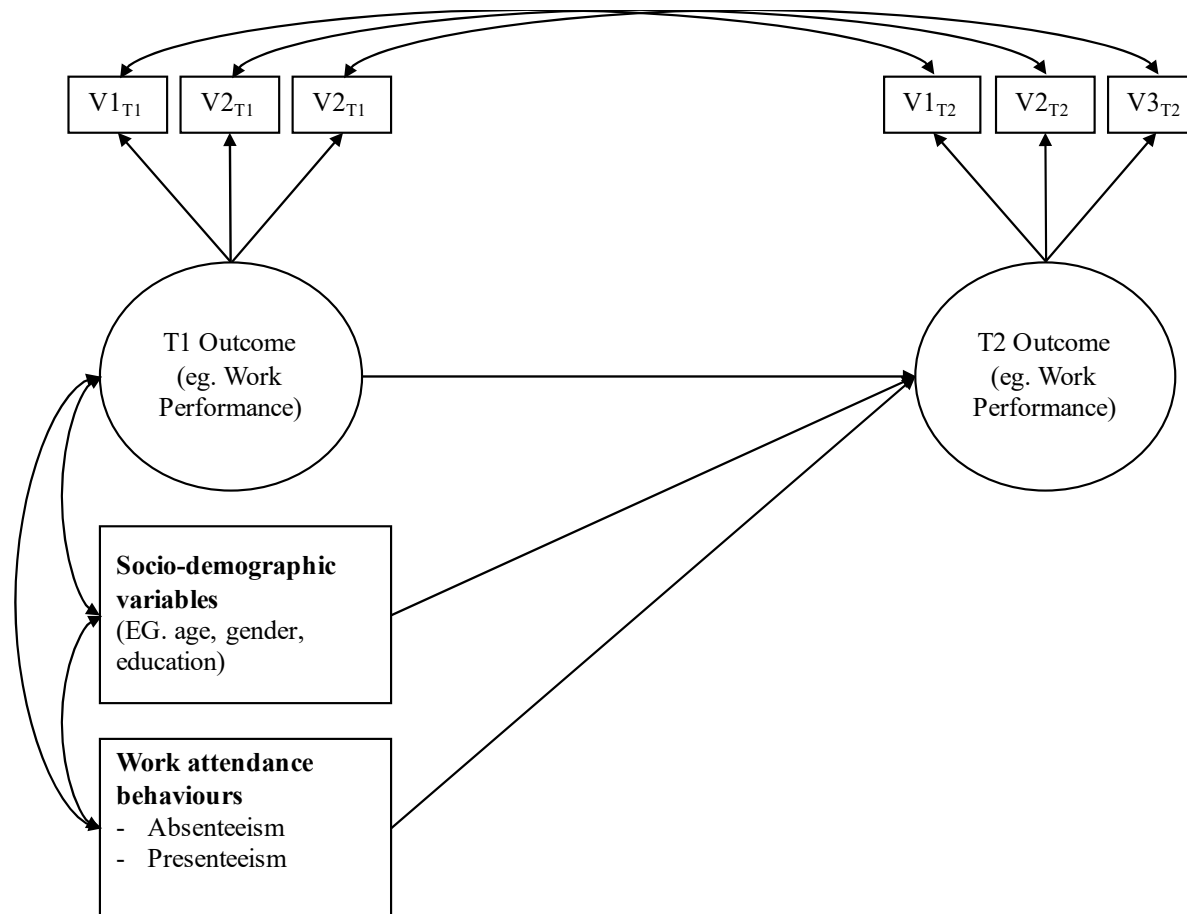


Figure 1. Example path diagram of a prospective SEM (Model B) controlling for socio-demographic variables and stability effects. Note: Square boxes indicate measured variables, while circles depict latent variables. Double-headed arrows indicate covariances, while single-headed arrows depict structural pathways. Residual variances not shown. Socio-demographic and work attendance behaviours indicated by dummy variables (also not shown).

